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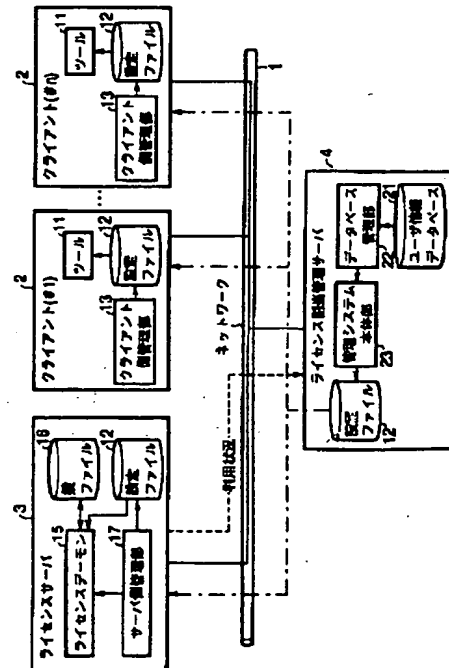
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(54) 【発明の名称】 ライセンス管理システム

(57) 【要約】

【課題】 ソフトウェアのライセンス資源の柔軟な管理を実現するために設定ファイルの変更を正確にかつ適切なタイミングで実行する。

【解決手段】 ライセンス管理システムにおいて、更新用の設定情報12を生成し、各クライアント及びサーバに送信する設定情報生成手段31、32、33、34と、鍵を管理するサーバ機能15に対し、更新用の設定情報が更新可能なタイミングを問い合わせることで設定情報の更新タイミングを決定し、各クライアント及びサーバに更新指令を出力する設定変更制御手段36と、設定変更制御手段からの更新指令に基づき、設定情報生成手段から受信した設定情報をクライアントにおいて更新するクライアント側更新手段48、49と、設定変更制御手段からの更新指令に基づき、設定情報生成手段から受信した設定情報をサーバにおいて更新するサーバ側更新手段43、44とを備えたライセンス管理システム。



## 【特許請求の範囲】

【請求項 1】 ソフトウェアを動作させるクライアントと当該ソフトウェアを動作可能とする鍵を管理するサーバとからなるとともに、前記ソフトウェアの使用許可を判断するための設定情報を各クライアント及びサーバに備えるライセンス管理システムにおいて、更新用の設定情報を生成し、前記各クライアント及び前記サーバに送信する設定情報生成手段と、前記鍵を管理するサーバ機能に対し、前記更新用の設定情報が更新可能なタイミングを問い合わせることで設定情報の更新タイミングを決定し、各クライアント及びサーバに更新指令を出力する設定変更制御手段と、前記設定変更制御手段からの更新指令に基づき、前記設定情報生成手段から受信した設定情報をクライアントにおいて更新するクライアント側更新手段と、前記設定変更制御手段からの更新指令に基づき、前記設定情報生成手段から受信した設定情報をサーバにおいて更新するサーバ側更新手段とを備えたことを特徴とするライセンス管理システム。

【請求項 2】 前記サーバ側更新手段は、前記更新指令を受けると、一日前記鍵を管理するサーバ機能を停止した上で設定情報を更新し、その後前記鍵を管理するサーバ機能を再起動することを特徴とする請求項 1 記載のライセンス管理システム。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】 この発明はソフトウェアの使用許可を与えるためのライセンス管理システムに関する。

## 【0002】

【従来の技術】 各種ツールやアプリケーション等のソフトウェアはデジタル情報であるために容易にコピーすることができるが、ソフトウェア提供者はソフトウェアの不正コピー／不正使用を防止するために顧客と契約し、その使用本数に制限を課する場合が多い。

【0003】 上記コピー容易性を考慮しつつ、この使用本数制限を有効なものとするためのライセンス管理システムとして、従来からフローティングライセンスシステムが用いられている。

【0004】 図 3 は従来のライセンス管理システムの構成例を示す図である。

【0005】 このようなライセンス管理システムでは、各クライアント 81 にライセンス等を管理するために設定ファイル 82 が設けられるとともに、具体的なライセンス管理を実行するためのライセンスサーバ 83 が設けられる。なお、各クライアント 81 とライセンスサーバ 83 は LAN 86 で接続されている。

【0006】 ライセンスサーバ 83 は、設定ファイル 82 を有するとともに、各クライアント 81 に設けられたソフトウェア 84 を実行可能とするためのライセンスキ

ー 85 を管理している。このライセンスキー 85 はソフトウェア提供者との契約で定められた本数だけ用意されており、一つのライセンスキー 85 は一度に一カ所（ソフトウェア 84）でしか使用できないようになっている。

【0007】 なお、このライセンスキーは許可条件（本数、使用期限など）の情報とともにライセンスコードという英数字などで構成された文字列に埋め込まれ、ライセンス提供者からユーザーに提供されるものである。

【0008】 なお、ソフトウェア 84 は、ライセンスキー 85 なしには目的の処理を実行できる状態とはならないように構成されている。ここで、まず、クライアント 81 においてソフトウェア 84 の起動が要求されると、当該ソフトウェア 84 は、設定ファイル 82 を調べ自己の置かれた状況で動作許可されているかを確認するとともに、ライセンスサーバ 83 の情報を取得する。なお、設定ファイル 82 には、プログラム（ソフトウェア）特定情報、ライセンスコード、ライセンスサーバ特定情報、ユーザ特定情報、動作計算機特定情報等が格納されている。

【0009】 この取得情報に基づき、ソフトウェア 84 からライセンスサーバ 83 への動作許可の問い合わせが行われる。

【0010】 この問い合わせに応じ、ライセンスサーバ 83 はソフトウェア動作要求を行ったユーザ／クライアントのライセンス有無情報を設定ファイル 82 から取得する。さらに、ユーザが当該ソフトウェアについての使用許可権限を有する場合には、ライセンスキー 85 の使用割り当て状況を確認し、使用割り当て可能なライセンスキー 85 が残っていれば、当該ライセンスキー 85 を要求のあったクライアント 81 に送出する。

【0011】 ライセンスキー 85 を受け取ったクライアント 81 上のソフトウェア 84 は、そのライセンスキー 85 により自分自身を動作可能状態とし、当該クライアント 81 を使用するユーザの要求に応じて各種処理を実行する。

【0012】 種々の処理が終了し、ソフトウェア 84 を終了するときには、ライセンスキー 85 はクライアント 81 からライセンスサーバ 83 に戻され、当該ソフトウェア 84 は再び動作不能な状態となる。

## 【0013】

【発明が解決しようとする課題】 しかしながら、上記したライセンス管理システムにおいても、まだ解決すべき以下のような課題がある。

【0014】 例えば新たなソフトウェアが加わったり、クライアントシステムの構成や使用するべきユーザのメンバーが変更され、設定ファイル 82 の内容を変更する必要があることが問題である。適切な設定ファイル変更が適宜なタイミングで行われないと、異動や退職によりソフトウェア実行許可を外すべき者がソフトウェアを実行し

続け得る、等の事態も生じる。

【0015】このために設定ファイルの適切かつタイムリーな変更を容易に行うことが重要である。しかし、設定ファイル82は、各クライアント81及びライセンスサーバ83の各計算機上に分散しており一元管理ができないため、容易な変更を実現することは困難である。

【0016】また、ミスや修正漏れによって各計算機上における設定ファイルの同一性が失われると、フローティングライセンスシステムの正常動作が保てなくなる。したがって、設定ファイル82の修正に当たっては全てのファイルに対して同様に行うことが重要となる。

【0017】さらに、設定ファイル82の変更時にはライセンスサーバ83を停止する必要があるため、この間はクライアント81のソフトウェア84を起動できないし、起動中のソフトウェア84に対するライセンスの保証がされない。

【0018】また、設定ファイル82の作成や変更には長時間を要するため、上記した状況とあいまってツールの動作している時間帯に設定ファイル82を変更することは困難である。さらに、ツールの動いていない時間帯は作業者のいない深夜、早朝の不定期な時間であるため、設定ファイルを変更するには作業者の負担を強いることになる。

【0019】本発明は、このような実情を考慮してなされたもので、設定ファイルの変更を正確にかつ適切なタイミングで実行することを可能としたライセンス管理システムを提供することを目的とする。

【0020】

【課題を解決するための手段】上記課題を解決するために、請求項1に対応する発明は、ソフトウェアを動作させるクライアントと当該ソフトウェアを動作可能とする鍵を管理するサーバとからなるとともに、ソフトウェアの使用許可を判断するための設定情報を各クライアント及びサーバに備えるライセンス管理システムにおいて、更新用の設定情報を生成し、各クライアント及びサーバに送信する設定情報生成手段と、鍵を管理するサーバ機能に対し、更新用の設定情報が更新可能なタイミングを問い合わせることで設定情報の更新タイミングを決定し、各クライアント及びサーバに更新指令を出力する設定変更制御手段と、設定変更制御手段からの更新指令に基づき、設定情報生成手段から受信した設定情報をクライアントにおいて更新するクライアント側更新手段と、設定変更制御手段からの更新指令に基づき、設定情報生成手段から受信した設定情報をサーバにおいて更新するサーバ側更新手段とを備えたライセンス管理システムである。

【0021】本発明はこのような手段を設けたので、設定情報の変更を正確にかつ適切なタイミングで実行することができ、設定情報変更に伴う各種の弊害を防止することができる。

【0022】また、請求項2に対応する発明は、請求項1に対応する発明において、サーバ側更新手段は、更新指令を受けると、一日前記鍵を管理するサーバ機能を停止した上で設定情報を更新し、その後鍵を管理するサーバ機能を再起動するライセンス管理システムである。

【0023】本発明はこのような手段を設けたので、よりスムーズな設定情報更新を行うことができるとともに、安全かつ正確に設定情報を更新できる。

【0024】

【発明の実施の形態】以下、本発明の実施の形態について説明する。

【0025】図1は本発明の実施形態に係るライセンス管理システムを適用するネットワークシステムの一構成例を示すブロック図である。

【0026】このネットワークシステムは、データ伝送路1に複数のクライアント2（#1）～2（#n）、ライセンスサーバ3及びライセンス割当管理サーバ4が接続されてなるLANであり、各クライアント2、ライセンスサーバ3及びライセンス割当サーバ4は、パーソナルコンピュータやワークステーション等の計算機に通信装置（ネットワークカード等）が組み込まれて構成されている。

【0027】各クライアント2には、動作許可対象となるソフトウェアとしてのツール11と、設定ファイル12と、クライアント側管理部13とが設けられている。ここで、ツール11は従来技術で説明した図3のソフトウェア84と同様なものであり、設定ファイル12にも図3の設定ファイル82と同様な情報が格納されている。

【0028】クライアント側管理部13は、設定ファイル12を更新するものであり、ライセンス管理システムの一部を構成する。

【0029】次に、ライセンスサーバ3は、ライセンスデーモン15と、鍵ファイル16と、クライアント2における同一の設定ファイル12と、サーバ側管理部17とから構成されている。

【0030】ライセンスデーモン15は、フローティングライセンスシステムのライセンスサーバの機能を確保するものであり、従来技術の図3におけるライセンスサーバ83の機能を有する。

【0031】鍵ファイル16は、設定ファイル12から生成されライセンスデーモン15によって管理されるライセンスキーを格納する。

【0032】サーバ側管理部17は、設定ファイル12を更新するとともに、設定ファイル12を更新するためにライセンスデーモン15を制御するものであり、ライセンス管理システムの一部を構成する。

【0033】次に、ライセンス割当管理サーバ4は、設定ファイル12を作成しクライアント2やライセンスサーバ3に送付するとともに、設定ファイル12の更新指

示をサーバ側管理部17及びクライアント側管理部13に与えるものである。このライセンス割当管理サーバ4は、ユーザ情報データベース21、データベース管理部22及び管理システム本体部23から構成されている。

【0034】ユーザ情報データベース21は、各ソフトウェア情報、各ソフトウェアを使用許可されるユーザ、ワークステーション等の情報の他、使用許可されるソフトウェアの期間情報が含まれる。なお、ソフトウェア情報にはソフトウェアの種類情報の他、各ソフトウェアにおいて個々に動作許可され、各々ライセンスキーを必要とするブロックがあるのならそのライセンス割当単位に関する情報や、さらに、その各ソフトウェア（上記ブロックを含む）毎のライセンス数（鍵の数）も含む。

【0035】データベース管理部22は、ユーザ情報データベース21の内容を新規登録、参照、修正、削除等する。

【0036】管理システム本体部23は、ライセンス管理システムの一部を構成する。すなわち、ユーザ情報データベース21に格納された各種情報をデータベース管理部22に依頼して読み取り、その読み取り結果に基づいて設定ファイル12を作成しクライアント2やライセンスサーバ3に送付する。さらに、設定ファイル12の更新指示をサーバ側管理部17及びクライアント側管理部13に与える。

【0037】本実施形態のライセンス管理システムは、上記した管理システム本体部23と、サーバ側管理部17と、クライアント側管理部13を主要構成としている。

【0038】図2は本実施形態のライセンス管理システムの構成例を示すブロック図である。

【0039】同図においては、データベース管理部22、管理システム本体部23、サーバ側管理部17及びクライアント側管理部13の詳細構成が示されている。

【0040】データベース管理部22には、ユーザ情報データベース21に対する処理を実行し、また読出情報を管理システム本体部23に与えるDB管理処理部25と、DB管理処理部25に与える登録データや各種要求を受け付けその結果等を出力する入出力装置としてのDB登録参照部26とが設けられている。

【0041】管理システム本体部23は、更新起動部31と、ライセンス割当管理部32と、設定ファイル生成部33と、設定ファイル送信部34と、通信制御部35と、設定変更制御部36とから構成されている。

【0042】このうち、更新起動部31、ライセンス割当管理部32、設定ファイル生成部33、設定ファイル送信部34及び通信制御部35の有する構成により、ユーザ情報データベース21から読み出した情報に基づく設定ファイル12が作成され、サーバ側管理部17及びクライアント側管理部13に送信される。

【0043】また、設定変更制御部36は、ライセンス

デーモン15と通信を行い、先に送付した設定ファイル12を更新するタイミングを決定し、その決定に基づいて、サーバ側管理部17及びクライアント側管理部13に対する更新制御指令を与える。

【0044】サーバ側管理部17は、通信制御部41と、設定ファイル受信部42と、ライセンス情報設定部43と、設定変更制御部44と、ライセンスデーモン制御部45とから構成されている。

【0045】このうち通信制御部41、設定ファイル受信部42及びライセンス情報設定部43は、設定ファイル12を更新するための構成であり、設定変更制御部44及びライセンスデーモン制御部45はライセンスデーモン15を制御するための構成である。

【0046】クライアント側管理部13は、通信制御部46と、設定ファイル受信部47と、クライアント情報設定部48と、設定変更制御部49とから構成されている。

【0047】このうち通信制御部46、設定ファイル受信部47、クライアント情報設定部48及び設定変更制御部49は、設定ファイル12を更新するための構成である。

【0048】次に、以上のように構成された本実施形態におけるライセンス管理システムの動作について主として図2を用いて説明する。

【0049】ライセンスデーモン15、設定ファイル12、ツール11を構成要素とするフローティングライセンスシステムとしての動作については図3に示す従来技術と同様であるので、説明を省略する。ここでは、設定ファイル12の更新処理について説明する。

【0050】まず、DB登録参照部26及びDB管理処理部25を介して、ソフトウェア（ツール11）のライセンス管理に関する情報が適宜更新され、ユーザ情報データベース21に格納されている。

【0051】一方、管理システム本体部23における更新起動部31には時刻管理機能が設けられており、設定時刻になる度に、ユーザ情報データベース21からライセンス管理用の情報が読み出される。

【0052】この読出情報に基づき、ライセンス割当管理部32により、どのソフトウェアをどのユーザが使えるか等についての割当が行われ、さらにこの割当結果に基づいて設定ファイル生成部33により設定ファイル12が生成される。

【0053】生成された設定ファイル12は、設定ファイル送信部34及び通信制御部35を介して各クライアント2及びライセンスサーバ3に送信される。ファイル12は、さらに各通信制御部46、41及び設定ファイル受信部47、42を介してクライアント側管理部13のクライアント情報設定部48及びサーバ側管理部17のライセンス情報設定部43に引き渡される。

【0054】一方、管理システム本体部23の設定ファ

イル生成部33は設定ファイル12を生成した場合にはその旨を設定変更制御部36に通知し、この通知に基づいて設定変更制御部36によるファイル更新タイミングの取得処理が開始される。

【0055】すなわち、設定変更制御部36によりライセンスデーモン15に対して問合せが行われ、当該ライセンスデーモン15が管理するライセンスキーがどのクライアント2にも貸し出されていないことが確認される。ここで、ライセンスデーモン15からライセンスキーが貸し出されている旨の返答がきたら、設定変更制御部36においてはタイマが起動され、一定時間待機した後に、上記問合せ処理が再び行われる。

【0056】こうして、ライセンスデーモン15、設定変更制御部36間のやり取りでライセンスキーの貸し出しが行われていない状態が確認されると、管理システム本体部23の設定変更制御部36からサーバ側管理部17及びクライアント側管理部13の設定変更制御部44、49に対してファイル更新指令が出力される。

【0057】サーバ側管理部17においては、まず、ファイル更新指令を受けた設定変更制御部44からライセンスデーモン制御部45に対し、ライセンスデーモン15の停止要求が出される。この要求に応じライセンスデーモン制御部45の制御によりライセンスデーモン15が停止される。

【0058】デーモン停止後、ライセンスデーモン制御部45からライセンス情報設定部43にその旨の通知が行われ、この通知を受けたライセンス情報設定部43により設定ファイル12の更新が実行される。なお、ここで更新に用いられるファイル12は、設定ファイル受信部42を介して設定ファイル生成部33から先に受け取ったものである。

【0059】設定ファイル更新後、その旨がライセンス情報設定部43から設定変更制御部44に通知され、この通知を受けて設定変更制御部44からライセンスデーモン15の再起動要求がライセンスデーモン制御部45になされる。

【0060】当該要求に従い、ライセンスデーモン制御部45によってライセンスデーモン15が再起動され、フローティングライセンスシステムにおけるライセンスサーバ3の状態は通常に復帰する。

【0061】また、上記サーバ側管理部17の処理に合わせてクライアント側管理部13でも設定ファイル12の更新が行われる。各クライアント2及びライセンスサーバ3におけるファイル更新処理が同期して行われるのは、管理システム本体部23からのファイル更新指令がこれらに同時に出力されるからである。

【0062】クライアント2での設定ファイル更新に当たり、まず、更新指令を受けた設定変更制御部49からファイル更新制御信号がクライアント情報設定部48に出力される。

【0063】この更新制御信号を受けたクライアント情報設定部48により、先に設定ファイル生成部33から受け取った新しい設定ファイル12でもって、クライアント上に現在設定されている設定ファイル12が更新される。

【0064】以上の各クライアント2及びライセンスサーバ3におけるファイル更新処理、並びにサーバ3でのファイル更新に合わせたライセンスデーモン15の停止及び再起動によって、全ての設定ファイル12が新しいものに更新されつつ、フローティングライセンスシステムの通常状態への復帰が実現される。

【0065】上述したように、本発明の実施の形態に係るライセンス管理システムは、ライセンス割当管理サーバ4に設定ファイルを生成する管理システム本体部23を設けるとともに、各クライアント2及びライセンスサーバ3にクライアント側管理部13、サーバ側管理部17を設け、管理システム本体部23からの指令でライセンスデーモン15を適宜定期再起動し、かつ各設定ファイル12を同時に更新するようにしたので、設定ファイル12の変更を正確にかつ適切なタイミングで実行することができる。これにより、効率的にツール11のライセンス資源を管理することができる。

【0066】したがって、本発明によれば、

- (1) ユーザ情報データベース21を利用することによる管理データ一元化による管理負荷の低減
- (2) 設定ファイル12の自動生成、自動配信によるファイル修正ミスの防止
- (3) ツールの実行状況から設定変更時期の調整を行うことによるツールのダウンタイム低減
- (4) 設定ファイルはユーザ情報データベース21の内容が適宜反映されることによる、異動、退社等により使用資格を失った不正ユーザのツール不正使用排除等が実現される。

【0067】なお、本発明は、上記各実施の形態に限定されるものでなく、その要旨を逸脱しない範囲で種々に変形することが可能である。

【0068】また実施形態ではいわゆるLANにライセンス管理システムを適用する場合を説明したが、本発明の適用範囲はLANに限られるものではない。例えば公衆回線を介するインターネット等、種々のネットワークシステムに適用可能である。Web (WWW: ワールドワイドウェブ) を介したアプリケーション利用の技術におけるライセンス管理システム等が考えられる。さらに、たとえハードウェアとしての計算機が単一であるような場合でも、同一計算機内に複数のプロセスやタスクを立ち上げて使用するようなときには本発明を適用することが可能である。

【0069】さらに実施形態では、ライセンスサーバ3とライセンス割当管理サーバ4は別々のコンピュータに設けた場合について説明したが、これらは同一コンピュ

ータに設けるようにしてもよい。

【0070】さらに実施形態では、ライセンスサーバ3における設定ファイル12と、各クライアント2における設定ファイル12との内容が同一になる場合について説明したが、本発明はこのように両者の内容を同一にする場合に限られるものではない。フローティングライセンスシステムの形態によっては設定情報の設定の仕方として種々のパターンが考えられる。例えば設定ファイルを2種類用意し、ライセンスサーバ3にはライセンスに関する情報を格納し、各クライアント2にはライセンス問合せ先、ライセンスサーバ3についての情報等のみを格納するようにしてもよい。

【0071】また、実施形態に記載した手法は、計算機（コンピュータ）に実行させることができるプログラム（ソフトウェア手段）として、例えば磁気ディスク（フロッピーディスク、ハードディスク等）、光ディスク（CD-ROM、DVD等）、半導体メモリ等の記憶媒体に格納し、また通信媒体により伝送して頒布することもできる。なお、媒体側に格納されるプログラムには、計算機に実行させるソフトウェア手段（実行プログラムのみならずテーブルやデータ構造も含む）を計算機内に構成させる設定プログラムをも含むものである。本装置を実現する計算機は、記憶媒体に記録されたプログラムを読み込み、また場合により設定プログラムによりソフトウェア手段を構築し、このソフトウェア手段によって動作が制御されることにより上述した処理を実行する。

【0072】

【発明の効果】以上詳記したように本発明によれば、ライセンスキーが貸し出されていないときにタイミングを合わせて各設定ファイルを更新するようにしたので、設定ファイルの変更を正確にかつ適切なタイミングで実行することができ、ひいてはソフトウェアのライセンス資源の柔軟な管理を実現させることができるライセンス管理システムを提供することができる。

【図面の簡単な説明】

【図1】本発明の実施形態に係るライセンス管理システムを適用するネットワークシステムの一構成例を示すブロック図。

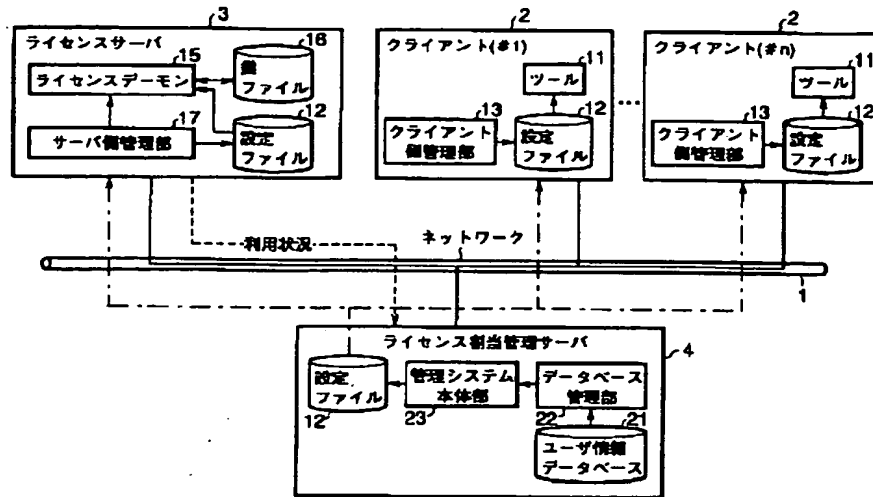
【図2】同実施形態のライセンス管理システムの構成例を示すブロック図。

【図3】従来のライセンス管理システムの構成例を示す図。

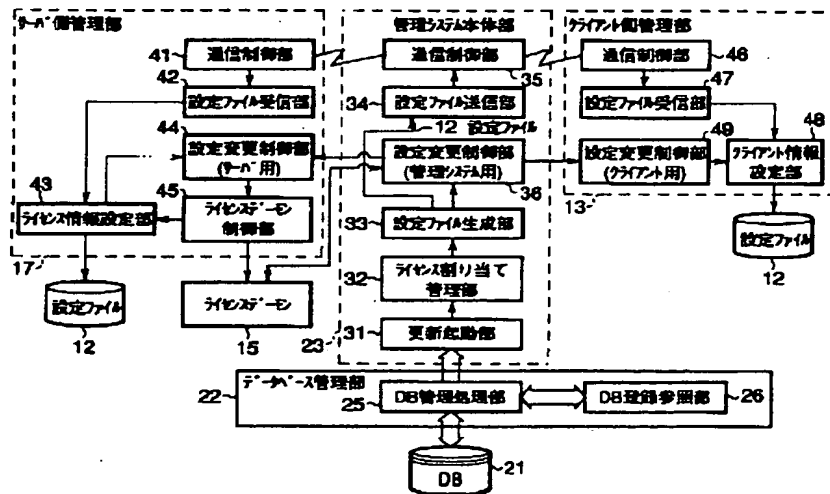
【符号の説明】

- 1…データ伝送路
- 2…クライアント
- 3…ライセンスサーバ
- 4…ライセンス割当管理サーバ
- 11…ツール
- 12…設定ファイル
- 13…クライアント側管理部
- 15…ライセンスデーモン
- 16…鍵ファイル
- 17…サーバ側管理部
- 21…ユーザ情報データベース
- 22…データベース管理部
- 23…管理システム本体部
- 25…DB管理処理部
- 26…DB登録参照部
- 31…更新起動部
- 32…ライセンス割当管理部
- 33…設定ファイル生成部
- 34…設定ファイル送信部
- 35…通信制御部
- 36…設定変更制御部
- 41…通信制御部
- 42…設定ファイル受信部
- 43…ライセンス情報設定部
- 44…設定変更制御部
- 45…ライセンスデーモン制御部
- 46…通信制御部
- 47…設定ファイル受信部
- 48…クライアント情報設定部
- 49…設定変更制御部
- 81…クライアント
- 82…設定ファイル
- 83…ライセンスサーバ
- 84…ソフトウェア
- 85…ライセンスキー
- 86…LAN

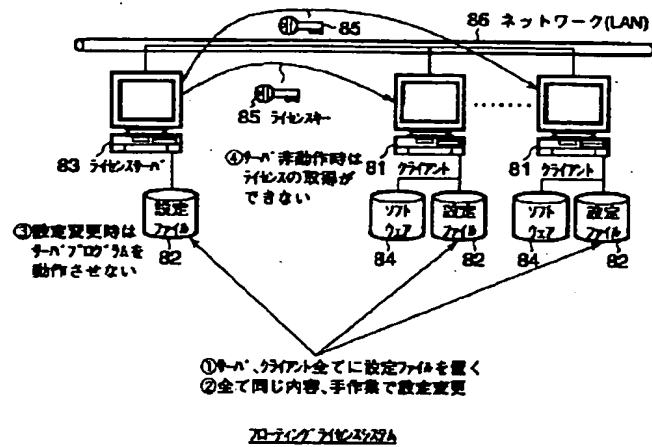
【図1】



【図2】



【図3】



フロントページの続き

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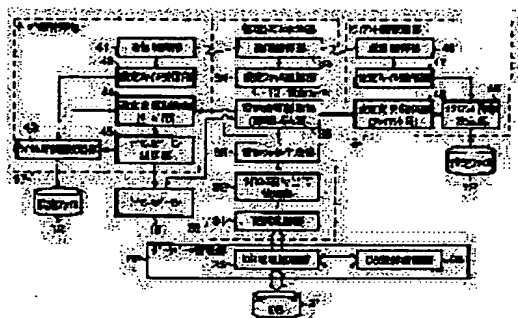
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## (54) LICENSE MANAGEMENT SYSTEM

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To accurately change a set file at an appropriate timing so as to realize flexible management of the license resources of software.

**SOLUTION:** This system is provided with setting information generation means (31, 32, 33 and 34) for generating setting information for updating and transmitting it to each client and a server, a setting change control means 36 for deciding the updating timing of the set information by inquiring of a server function for managing a key a timing capable of updating the set information for updating and outputting an updating command to each of the clients and the server, client side updating means (48 and 49) for updating the set information received from the setting information generation means in the clients based on the updating command from the setting change control means 36 and server side updating means (43 and 44) for updating the set information received from the setting information generation means in the server based on the updating command from the setting change control means 36.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

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examiner's decision of rejection or application  
converted registration]

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[Patent number]

[Date of registration]

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**CLAIMS**

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**[Claim]**

[Claim 1] While consisting of a server which manages the key which enables the operation of the client which operates software, and the concerned software in the license managerial system which equips each client and a server with the setting information for judging the licence of the aforementioned software A setting information generation means to generate the setting information for an update and to transmit to each aforementioned client and the aforementioned server, A setting change control means to determine the update timing of a setting information to the server function to manage the aforementioned key, by asking the timing which can update the setting information for the update of the above, and to output an update command to each client and a server, An update means of a client side to update the setting information received from the aforementioned setting information generation means in a client based on the update command from the aforementioned setting change control means, The license managerial system characterized by having an update means of a server side to update the setting information received from the aforementioned setting information generation means in a server, based on the update command from the aforementioned setting change control means.

[Claim 2] The aforementioned update means of a server side is the license managerial system of the claim 1 publication characterized by rebooting the server function to update a setting information after suspending the server function to once manage the aforementioned key, when the aforementioned update command was received, and to manage the account key of back to front.

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[Translation done.]

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DETAILED DESCRIPTION

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[Detailed description]

[0001]

[The technical field to which invention belongs] This invention relates to the license managerial system for giving the licence of software.

[0002]

[Prior art] Although it can copy easily since software, such as various tools and application, is digital information, a software provider contracts with a customer, in order to prevent the illegal copy/unauthorized use of software, and imposes a limit on the number of used books in many cases.

[0003] The floating license system is used from the former as a license managerial system for making effective this number limit of used books, taking the above-mentioned copy ease into consideration.

[0004] Drawing 3 is drawing showing the example of a configuration of the conventional license managerial system.

[0005] In such a license managerial system, in order to manage a license etc. to each client 81, while a configuration file 82 is formed, the license server 83 for performing a concrete license management is formed. In addition, each client 81 and the license server 83 are connected by LAN86.

[0006] A license server 83 has managed the license key 85 for making into an execute permission software 84 prepared in each client 81 while it has a configuration file 82. Only the number of books as which this license key 85 was determined by the contract with a software provider is prepared, and one license key 85 can be used no longer by one place (software 84) at once.

[0007] In addition, this license key is embedded at the character string which consisted of the alphabetic character called a license code with the information on authorization conditions (the number of books, expiration date, etc.), and a user is provided with it from a license provider.

[0008] In addition, without the license key 85, software 84 is constituted so that it may not be in the status that the target processing can be performed. Here, first, if activation of software 84 is demanded in a client 81, the concerned software 84 will acquire the information on a license server 83 while it checks whether authorization of operation is carried out in the status that investigate a configuration file 82 and self was placed. In addition, program (software) specific information, a license code, license server specific information, user specific information, computer specific information of operation, etc. are stored in the configuration file 82.

[0009] Based on this acquisition information, a question of the authorization of operation to a license server 83 is performed from software 84.

[0010] According to this question, a license server 83 acquires the license existence information on the user/client which performed the software operation demand from a configuration file 82. Furthermore, if the use quota status of the license key 85 is checked and the license key 85 in which use assignment is possible remains when an user has the licence authority about the concerned software, the concerned license key 85 is sent out to the client 81 with the demand.

[0011] The software 84 on the client 81 which received the license key 85 makes itself the status which can be operated by the license key 85, and performs various processings according to a demand of the user who uses the concerned client 81.

[0012] When various processings are completed and software 84 is ended, the license key 85 is returned to a license server 83 from a client 81, and the concerned software 84 will be in the status again which cannot be operated.

[0013]

[Object of the Invention] However, the following technical problems which should still be solved occur also in the above-mentioned license managerial system.

[0014] For example, it is a problem that new software is applied, or the client structure of a system and an user's member which should be used are changed, and it is necessary to change the content of a configuration file 82. If suitable configuration-file change is not performed to proper timing, the situation of the person who should move software execution authorization by a change or retirement to continuing performing software will also be produced.

[0015] For this reason, it is important to perform suitable and timely change of a configuration file easily. However, since it is distributing on each computer of each client 81 and the license server 83 and a configuration file 82 cannot perform an unitary management, it is difficult to realize easy change.

[0016] It becomes impossible, moreover, to maintain a normal operation of a floating license system, if the identity of the configuration file on each computer is lost by a mistake or correction mistake. Therefore, if it gets poisoned by corruption of a configuration file 82, it becomes important to carry out similarly to all files.

[0017] Furthermore, since it is unnecessary to stop a license server 83 at the time of change of a configuration file 82, the software 84 of a client 81 cannot be started in the meantime, and an assurance of the license to the software 84 under activation is not offered.

[0018] Moreover, in order for a creation and change of a configuration file 82 to take a long time, it is difficult to change a configuration file 82 at the time zone when the above-mentioned status is suited at, it waits at, and the tool is operating. Furthermore, since the time zone when a tool is not moving is irregular time of midnight and early morning in which an operator is not, for changing a configuration file, it will be forced an operator's burden.

[0019] this invention was made in consideration of such actual condition, and aims at offering the license managerial system which enabled it to perform change of a configuration file to exact and suitable timing.

[0020]

[The means for solving a technical problem] In order to solve the above-mentioned technical problem, invention corresponding to a claim 1 While consisting of a server which manages the key which enables the operation of the client which operates software, and the concerned software In the license managerial system which equips each client and a server with the setting information for judging the license of software A setting information generation means to generate the setting information for an update and to transmit to each client and a server, A setting change control means to determine the update timing of a setting information to the server function to manage a key, by asking the timing which can update the setting information for an update, and to output an update command to each client and a server, An update means of a client side to update the setting information received from the setting information generation means in a client based on the update command from a setting change control means, It is the license managerial system equipped with an update means of a server side to update the setting information received from the setting information generation means in a server based on the update command from a setting change control means.

[0021] Since this invention established such a means, it can perform change of a setting information to exact and suitable timing, and can prevent various kinds of evils accompanied by setting information change.

[0022] Moreover, invention corresponding to a claim 2 is a license managerial system which reboots the server function for the update means of a server side to update a setting information after suspending the server function to once manage the aforementioned key, when the update command was received, and to manage a key after that in invention corresponding to a claim 1.

[0023] It can update a setting information safely and correctly while it can perform the more smooth update of a setting information, since this invention established such a means.

[0024]

[Gestalt of implementation of invention] Hereafter, the gestalt of enforcement of this invention is explained.

[0025] Drawing 1 is the block diagram showing the example of 1 configuration of the network system which applies the license managerial system concerning the enforcement gestalt of this invention.

[0026] This network system is LAN which comes to connect two or more clients 2 (#1)-2 (#n), the license server 3, and the license allocation management server 4 with the data transmission line 1, communication devices (network card etc.) are incorporated by computers, such as a personal computer and a work station, and each client 2, the license server 3, and the license allocation server 4 are constituted.

[0027] The tool 11 as software used as an authorization object of operation, the configuration file 12, and the client side Management Department 13 are established in each client 2. Here, a tool 11 is the same as that of the software 84 of drawing 3 explained with the conventional technique, and the same information as the configuration file 82 of drawing 3 is stored also in the configuration file 12.

[0028] The client side Management Department 13 updates a configuration file 12, and constitutes a part of license managerial system.

[0029] Next, the license server 3 consists of the same configuration file 12 and the server side Management Department 17 also in the client 2 with the license demon 15 and the key file 16.

[0030] The license demon 15 secures the function of the license server of a floating license system, and has the function of the license server 83 in drawing 3 of the conventional technique.

[0031] The key file 16 stores the license key which is generated from a configuration file 12 and managed by the license demon 15.

[0032] The server side Management Department 17 controls the license demon 15, in order to update a configuration file 12, and constitutes a part of license managerial system while it updates a configuration file 12.

[0033] Next, the license allocation management server 4 gives the server side Management Department 17 and the client side Management Department 13 update designation of a configuration file 12 while it creates a configuration file 12 and sends it to a client 2 or the license server 3. This license allocation management server 4 consists of a user information database 21, the database-management section 22, and a managerial-system book soma 23.

[0034] The term information on software that the license of the user information database 21 is carried out besides the information on each software information, the user by whom a license is done in each software, a work station, etc. is included. in addition, the information concerning the license unit of allocation if there is

[ in / each software besides the modality information on software / in a software information ] a block which authorization of operation is separately carried out and needs an each license key — the number (the number of keys) of licenses of each of that software (the above-mentioned block is included) of every is also included further

[0035] As for the database-management section 22, new registration, reference, correction, deletion, etc. carry out the content of the user information database 21.

[0036] The managerial-system book soma 23 constitutes a part of license managerial system. That is, the various informations stored in the user information database 21 are requested from the database-management section 22, and are read, a configuration file 12 is created based on the reading result, and it sends to a client 2 or the license server 3. Furthermore, update designation of a configuration file 12 is given to the server side Management Department 17 and the client side Management Department 13.

[0037] The license managerial system of this enforcement gestalt is considering the above-mentioned managerial-system book soma 23, the server side Management Department 17, and the client side Management Department 13 as main configurations.

[0038] Drawing 2 is the block diagram showing the example of a configuration of the license managerial system of this enforcement gestalt.

[0039] In this drawing, the detailed configuration of the database-management section 22, the managerial-system book soma 23, the server side Management Department 17, and the client side Management Department 13 is shown.

[0040] DB management processing section 25 which performs processing to the user information database 21, and gives a read-out information to the managerial-system book soma 23, and DB registration reference section 26 as an I/O device which receives registration data and the various demands which are given to DB management processing section 25, and outputs the result etc. are formed in the database-management section 22.

[0041] The managerial-system book soma 23 consists of the update activation section 31, the license allocation Management Department 32, the configuration-file generation section 33, the configuration-file transmitting section 34, the communications control section 35, and a setting change control section 36.

[0042] Among these, the configuration file 12 based on the information read from the user information database 21 is created by the configuration which the update activation section 31, the license allocation Management Department 32, the configuration-file generation section 33, the configuration-file transmitting section 34, and the communications control section 35 have, and it is transmitted to the server side Management Department 17 and the client side Management Department 13 by it.

[0043] Moreover, the setting change control section 36 communicates with the license demon 15, determines the timing which updates the configuration file 12 sent previously, and gives the update control command to the server side Management Department 17 and the client side Management Department 13 based on the decision.

[0044] The server side Management Department 17 consists of the communications control section 41, the configuration-file receive section 42, the license information setting section 43, a setting change control section 44, and a license demon control section 45.

[0045] Among these, the communications control section 41, the configuration-file receive section 42, and the license information setting section 43 are the configurations for updating a configuration file 12, and the setting change control section 44 and the license demon control section 45 are the configurations for controlling the license demon 15.

[0046] The client side Management Department 13 consists of the communications control section 46, a configuration-file receive section 47, the client information setting section 48, and a setting change control section 49.

[0047] Among these, the communications control section 46, the configuration-file receive section 47, the client information setting section 48, and the setting change control section 49 are the configurations for updating a configuration file 12.

[0048] Next, an operation of the license managerial system in this enforcement gestalt constituted as mentioned above is mainly explained using drawing 2.

[0049] Since it is the same as that of the conventional technique shown in drawing 3 about the operation as a floating license system which makes a component the license demon 15, the configuration file 12, and the tool 11, an explanation is omitted. Here, an update process of a configuration file 12 is explained.

[0050] First, through DB registration reference section 26 and DB management processing section 25, the information about a license management of software (tool 11) is updated suitably, and is stored in the user information database 21.

[0051] On the other hand, the time-of-day-control function is prepared in the update activation section 31 in the managerial-system book soma 23, and whenever it becomes setting time, the information for a license management is read from the user information database 21.

[0052] Based on this read-out information, which user can use which software and allocation of an about are performed by the license allocation Management Department 32, and a configuration file 12 is further generated by the configuration-file generation section 33 based on this allocation result.

[0053] The generated configuration file 12 is transmitted to each client 2 and the license server 3 through the configuration-file transmitting section 34 and the communications control section 35. A file 12 is further handed over by the client information setting section 48 of the client side Management Department 13, and the license

information setting section 43 of the server side Management Department 17 through each communications control sections 46 and 41 and the configuration-file receive sections 47 and 42.

[0054] On the other hand, the configuration-file generation section 33 of the managerial-system book soma 23 notifies the purport to the setting change control section 36, when a configuration file 12 is generated, and based on this notice, acquisition processing of the file updating timing by the setting change control section 36 is started.

[0055] That is, an inquiry is performed by the setting change control section 36 to the license demon 15, and it is checked that the license key which the concerned license demon 15 manages is lent out to no client 2. Here, if the answerback of a purport to which the license key is lent out from the license demon 15 comes, a timer is started in the setting change control section 36, and after carrying out fixed time standby, the above-mentioned query processing will be performed again.

[0056] In this way, authentication of the status that the loan of a license key is not performed by the exchange between the license demon 15 and the setting change control section 36 outputs a file updating command to the setting change control sections 44 and 49 of the server side Management Department 17 and the client side Management Department 13 from the setting change control section 36 of the managerial-system book soma 23.

[0057] In the server side Management Department 17, the license demon's 15 deactivate request is first advanced from the setting change control section 44 which received the file updating command to the license demon control section 45. According to this demand, the license demon 15 is stopped by control of the license demon control section 45.

[0058] A notice of the purport is performed among the license information setting section 43 from the license demon control section 45 after a demon halt, and the update of a configuration file 12 is performed by the license information setting section 43 which received this notice. In addition, the file 12 used for an update here is previously received from the configuration-file generation section 33 through the configuration-file receive section 42.

[0059] The purport is notified to the setting change control section 44 from the license information setting section 43 after the update of a configuration file, and a rebooting demand of the license demon 15 is made by the license demon control section 45 from the setting change control section 44 in response to this notice.

[0060] According to the concerned demand, the license demon 15 is rebooted by the license demon control section 45, and the status of the license server 3 in a floating license system returns to usual.

[0061] Moreover, in accordance with processing of the above-mentioned server side Management Department 17, the update of a configuration file 12 is performed also at the client side Management Department 13. Since the file updating command from the managerial-system book soma 23 is simultaneously taken out to these is carried out by file updating processing in each client 2 and the license server 3 synchronizing.

[0062] A file updating control signal is first outputted to the client information setting section 48 in the update of a configuration file by the client 2 from the setting change control section 49 which received the update command.

[0063] By the client information setting section 48 which received this update control signal, it has by the new configuration file 12 previously received from the configuration-file generation section 33, and the configuration file 12 set up on the client now is updated.

[0064] The return to the normal state of a floating license system is realized by a halt and rebooting of the license demon 15 who doubled with file updating processing in the above each client 2 and license server 3 and the file updating in a server 3, all the configuration files 12 being updated by the new thing.

[0065] As mentioned above, the license managerial system concerning the gestalt of enforcement of this invention While the managerial-system book soma 23 which generates a configuration file is formed in the license allocation management server 4 The client side Management Department 13 and the server side Management Department 17 are established in each client 2 and the license server 3. Since fixed rebooting of the license demon 15 is suitably carried out by the command from the managerial-system book soma 23 and each configuration file 12 was updated simultaneously, change of a configuration file 12 can be performed to exact and suitable timing. Thereby, the license resources of a tool 11 are efficiently manageable.

[0066] Therefore, the automatic generation of the reduction (2) configuration file 12 of the management load by the management-data unification by using (1) user information database 21 according to this invention. The change by the content of the user information database 21 being reflected suitably, as for the down-time reduction (4) configuration file of the tool by adjusting the setting change stage from the execution status of the prevention (3) tool of the file correction mistake by automatic distribution, Tool unauthorized use exclusion of the inaccurate user who lost use capability by leaving etc. is realized.

[0067] in addition, in the domain which is not limited to the gestalt of each above-mentioned implementation, and does not deviate from the summary, many things are boiled and this invention can be deformed

[0068] Moreover, although the enforcement gestalt explained the case where a license managerial system was applied to the so-called LAN, the applicability of this invention is not restricted to LAN. For example, it is applicable to various network systems, such as the internet through a public line. The license managerial system in the technique of the application us through Web (WWW: World Wide Web) etc. can be considered. Furthermore, when the computer as hardware is single and multiple processes and a task are started and used in the same computer even if, it is possible to apply this invention.

[0069] Furthermore, with the enforcement gestalt, although the case where a license server 3 and the license

allocation management server 4 were formed in a separate computer was explained, you may be made to prepare these in the same computer.

[0070] Furthermore, with the enforcement gestalt, although the case where the content of the configuration file 12 in a license server 3 and the configuration file 12 in each client 2 became the same was explained, this invention is not restricted, when making both content the same in this way. According to the gestalt of a floating license system, various patterns can be considered as the method of a setup of a setting information. For example, two kinds of configuration files are prepared, the information about a license is stored in a license server 3, and it may be made to store chisels, such as an information about a license reference and the license server 3, in each client 2.

[0071] Moreover, as a program (software means) which a computer (computer) can be made to perform, the technique indicated in the enforcement gestalt is stored in storages, such as magnetic disks (a floppy disk, hard disk, etc.), optical disks (CD-ROM, DVD, etc.), and semiconductor memory, and can be transmitted by communication media and can also be distributed. In addition, the setting program which makes the software means (not only an executive program but a table and a data structure are included) which a computer is made to perform constitute in a computer is also included in the program stored in a medium side. The computer which realizes this equipment performs processing mentioned above when the program recorded by the storage was read, and a software means was built and an operation was controlled by the case by the setting program by this software means.

[0072]

[Effect of the invention] Since according to this invention timing is doubled and each configuration file was updated when the license key was not lent out as a full account was given above, the license managerial system which change of a configuration file can be performed [managerial system] to exact and suitable timing, as a result can make a flexible management of the license resources of software realize can be offered.

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**TECHNICAL FIELD**

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[The technical field to which invention belongs] This invention relates to the license managerial system for giving the licence of software.

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[Translation done.]

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#### PRIOR ART

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[Prior art] Although it can copy easily since software, such as various tools and application, is digital information, a software provider contracts with a customer, in order to prevent the illegal copy/unauthorized use of software, and imposes a limit on the number of used books in many cases.

[0003] The floating license system is used from the former as a license managerial system for making effective this number limit of used books, taking the above-mentioned copy ease into consideration.

[0004] Drawing 3 is drawing showing the example of a configuration of the conventional license managerial system.

[0005] In such a license managerial system, in order to manage a license etc. to each client 81, while a configuration file 82 is formed, the license server 83 for performing a concrete license management is formed. In addition, each client 81 and the license server 83 are connected by LAN86.

[0006] A license server 83 has managed the license key 85 for making into an execute permission software 84 prepared in each client 81 while it has a configuration file 82. Only the number of books as which this license key 85 was determined by the contract with a software provider is prepared, and one license key 85 can be used no longer by one place (software 84) at once.

[0007] In addition, this license key is embedded at the character string which consisted of the alphabetic character called a license code with the information on authorization conditions (the number of books, expiration date, etc.), and a user is provided with it from a license provider.

[0008] In addition, without the license key 85, software 84 is constituted so that it may not be in the status that the target processing can be performed. Here, first, if activation of software 84 is demanded in a client 81, the concerned software 84 will acquire the information on a license server 83 while it checks whether authorization of operation is carried out in the status that investigate a configuration file 82 and self was placed. In addition, program (software) specific information, a license code, license server specific information, user specific information, computer specific information of operation, etc. are stored in the configuration file 82.

[0009] Based on this acquisition information, a question of the authorization of operation to a license server 83 is performed from software 84.

[0010] According to this question, a license server 83 acquires the license existence information on the user/client which performed the software operation demand from a configuration file 82. Furthermore, if the use quota status of the license key 85 is checked and the license key 85 in which use assignment is possible remains when an user has the licence authority about the concerned software, the concerned license key 85 is sent out to the client 81 with the demand.

[0011] The software 84 on the client 81 which received the license key 85 makes itself the status which can be operated by the license key 85, and performs various processings according to a demand of the user who uses the concerned client 81.

[0012] When various processings are completed and software 84 is ended, the license key 85 is returned to a license server 83 from a client 81, and the concerned software 84 will be in the status again which cannot be operated.

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**EFFECT OF THE INVENTION**

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[Effect of the invention] Since according to this invention timing is doubled and each configuration file was updated when the license key was not lent out as a full account was given above, the license managerial system which change of a configuration file can be performed [ managerial system ] to exact and suitable timing, as a result can make a flexible management of the license resources of software realize can be offered.

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TECHNICAL PROBLEM

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[Object of the Invention] However, the following technical problems which should still be solved occur also in the above-mentioned license managerial system.

[0014] For example, it is a problem that new software is applied, or the client structure of a system and an user's member which should be used are changed, and it is necessary to change the content of a configuration file 82. If suitable configuration-file change is not performed to proper timing, the situation of the person who should remove software execution authorization by a change or retirement being able to continuing performing software will also be produced.

[0015] For this reason, it is important to perform suitable and timely change of a configuration file easily. However, since it is distributing on each computer of each client 81 and the license server 83 and a configuration file 82 cannot perform an unitary management, it is difficult to realize easy change.

[0016] It becomes impossible moreover, to maintain a normal operation of a floating license system, if the identity of the configuration file on each computer is lost by a mistake or correction leakage. Therefore, if it gets poisoned by correction of a configuration file 82, it becomes important to carry out similarly to all files.

[0017] Furthermore, since it is necessary to stop a license server 83 at the time of change of a configuration file 82, the software 84 of a client 81 cannot be started in the meantime, and an assurance of the license to the software 84 under activation is not offered.

[0018] Moreover, in order for a creation and change of a configuration file 82 to take a long time, it is difficult to change a configuration file 82 at the time zone when the above-mentioned status is suited at, it waits at, and the tool is operating. Furthermore, since the time zone when a tool is not moving is irregular time of midnight and early morning in which an operator is not, for changing a configuration file, it will be forced an operator's burden.

[0019] this invention was made in consideration of such actual condition, and aims at offering the license managerial system which enabled it to perform change of a configuration file to exact and suitable timing.

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**MEANS**


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[The means for solving a technical problem] In order to solve the above-mentioned technical problem, invention corresponding to a claim 1 While consisting of a server which manages the key which enables the operation of the client which operates software, and the concerned software In the license managerial system which equips each client and a server with the setting information for judging the licence of software A setting information generation means to generate the setting information for an update and to transmit to each client and a server, A setting change control means to determine the update timing of a setting information to the server function to manage a key, by asking the timing which can update the setting information for an update, and to output an update command to each client and a server, An update means of a client side to update the setting information received from the setting information generation means in a client based on the update command from a setting change control means, It is the license managerial system equipped with an update means of a server side to update the setting information received from the setting information generation means in a server based on the update command from a setting change control means.

[0021] Since this invention established such a means, it can perform change of a setting information to exact and suitable timing, and can prevent various kinds of evils accompanied by setting information change.

[0022] Moreover, invention corresponding to a claim 2 is a license managerial system which reboots the server function for the update means of a server side to update a setting information after suspending the server function to once manage the aforementioned key, when the update command was received, and to manage a key after that in invention corresponding to a claim 1.

[0023] It can update a setting information safely and correctly while it can perform the more smooth update of a setting information, since this invention established such a means.

[0024]

[Gestalt of implementation of invention] Hereafter, the gestalt of enforcement of this invention is explained.

[0025] Drawing 1 is the block diagram showing the example of 1 configuration of the network system which applies the license managerial system concerning the enforcement gestalt of this invention.

[0026] This network system is LAN which comes to connect two or more clients 2 (#1)~2 (#n), the license server 3, and the license allocation management server 4 with the data transmission line 1, communication devices (network card etc.) are incorporated by computers, such as a personal computer and a work station, and each client 2, the license server 3, and the license allocation server 4 are constituted.

[0027] The tool 11 as software used as an authorization object of operation, the configuration file 12, and the client side Management Department 13 are established in each client 2. Here, a tool 11 is the same as that of the software 84 of drawing 3 explained with the conventional technique, and the same information as the configuration file 82 of drawing 3 is stored also in the configuration file 12.

[0028] The client side Management Department 13 updates a configuration file 12, and constitutes a part of license managerial system.

[0029] Next, the license server 3 consists of the same configuration file 12 and the server side Management Department 17 also in the client 2 with the license demon 15 and the key file 16.

[0030] The license demon 15 secures the function of the license server of a floating license system, and has the function of the license server 83 in drawing 3 of the conventional technique.

[0031] The key file 16 stores the license key which is generated from a configuration file 12 and managed by the license demon 15.

[0032] The server side Management Department 17 controls the license demon 15, in order to update a configuration file 12, and constitutes a part of license managerial system while it updates a configuration file 12.

[0033] Next, the license allocation management server 4 gives the server side Management Department 17 and the client side Management Department 13 update designation of a configuration file 12 while it creates a configuration file 12 and sends it to a client 2 or the license server 3. This license allocation management server 4 consists of an user information database 21, the database-management section 22, and a managerial-system book soma 23.

[0034] The term information on software that the licence of the user information database 21 is carried out besides the information on each software information, the user by whom a licence is defined in each software, a work station, etc. is included. in addition, the information concerning the licence unit of allocation if there is [ in / each software besides the modality information on software / in a software information ] a block which authorization of operation is separately carried out and needs an each license key — the number (the number

of keys) of licenses of each of that software (the above-mentioned block is included) of every is also included further

[0035] As for the database-management section 22, new registration, reference, correction, deletion, etc. carry out the content of the user information database 21.

[0036] The managerial-system book soma 23 constitutes a part of license managerial system. That is, the various informations stored in the user information database 21 are requested from the database-management section 22, and are read, a configuration file 12 is created based on the reading result, and it sends to a client 2 or the license server 3. Furthermore, update designation of a configuration file 12 is given to the server side Management Department 17 and the client side Management Department 13.

[0037] The license managerial system of this enforcement gestalt is considering the above-mentioned managerial-system book soma 23, the server side Management Department 17, and the client side Management Department 13 as main configurations.

[0038] Drawing 2 is the block diagram showing the example of a configuration of the license managerial system of this enforcement gestalt.

[0039] In this drawing, the detailed configuration of the database-management section 22, the managerial-system book soma 23, the server side Management Department 17, and the client side Management Department 13 is shown.

[0040] DB management processing section 25 which performs processing to the user information database 21, and gives a read-out information to the managerial-system book soma 23, and DB registration reference section 26 as an I/O device which receives registration data and the various demands which are given to DB management processing section 25, and outputs the result etc. are formed in the database-management section 22.

[0041] The managerial-system book soma 23 consists of the update activation section 31, the license allocation Management Department 32, the configuration-file generation section 33, the configuration-file transmitting section 34, the communications control section 35, and a setting change control section 36.

[0042] Among these, the configuration file 12 based on the information read from the user information database 21 is created by the configuration which the update activation section 31, the license allocation Management Department 32, the configuration-file generation section 33, the configuration-file transmitting section 34, and the communications control section 35 have, and it is transmitted to the server side Management Department 17 and the client side Management Department 13 by it.

[0043] Moreover, the setting change control section 36 communicates with the license demon 15, determines the timing which updates the configuration file 12 sent previously, and gives the update control command to the server side Management Department 17 and the client side Management Department 13 based on the decision.

[0044] The server side Management Department 17 consists of the communications control section 41, the configuration-file receive section 42, the license information setting section 43, a setting change control section 44, and a license demon control section 45.

[0045] Among these, the communications control section 41, the configuration-file receive section 42, and the license information setting section 43 are the configurations for updating a configuration file 12, and the setting change control section 44 and the license demon control section 45 are the configurations for controlling the license demon 15.

[0046] The client side Management Department 13 consists of the communications control section 46, a configuration-file receive section 47, the client information setting section 48, and a setting change control section 49.

[0047] Among these, the communications control section 46, the configuration-file receive section 47, the client information setting section 48, and the setting change control section 49 are the configurations for updating a configuration file 12.

[0048] Next, an operation of the license managerial system in this enforcement gestalt constituted as mentioned above is mainly explained using drawing 2.

[0049] Since it is the same as that of the conventional technique shown in drawing 3 about the operation as a floating license system which makes a component the license demon 15, the configuration file 12, and the tool 11, an explanation is omitted. Here, an update process of a configuration file 12 is explained.

[0050] First, through DB registration reference section 26 and DB management processing section 25, the information about a license management of software (tool 11) is updated suitably, and is stored in the user information database 21.

[0051] On the other hand, the time-of-day-control function is prepared in the update activation section 31 in the managerial-system book soma 23, and whenever it becomes setting time, the information for a license management is read from the user information database 21.

[0052] Based on this read-out information, which user can use which software and allocation of an about are performed by the license allocation Management Department 32, and a configuration file 12 is further generated by the configuration-file generation section 33 based on this allocation result.

[0053] The generated configuration file 12 is transmitted to each client 2 and the license server 3 through the configuration-file transmitting section 34 and the communications control section 35. A file 12 is further handed over by the client information setting section 48 of the client side Management Department 13, and the license information setting section 43 of the server side Management Department 17 through each communications control sections 46 and 41 and the configuration-file receive sections 47 and 42.

[0054] On the other hand, the configuration-file generation section 33 of the managerial-system book soma 23 notifies the purport to the setting change control section 36, when a configuration file 12 is generated, and based on this notice, acquisition processing of the file updating timing by the setting change control section 36 is started.

[0055] That is, an inquiry is performed by the setting change control section 36 to the license demon 15, and it is checked that the license key which the concerned license demon 15 manages is lent out to no client 2. Here, if the answerback of a purport to which the license key is lent out from the license demon 15 comes, a timer is started in the setting change control section 36, and after carrying out fixed time standby, the above-mentioned query processing will be performed again.

[0056] In this way, authentication of the status that the loan of a license key is not performed by the exchange between the license demon 15 and the setting change control section 36 outputs a file updating command to the setting change control sections 44 and 49 of the server side Management Department 17 and the client side Management Department 13 from the setting change control section 36 of the managerial-system book soma 23.

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[0059] The purport is notified to the setting change control section 44 from the license information setting section 43 after the update of a configuration file, and a rebooting demand of the license demon 15 is made by the license demon control section 45 from the setting change control section 44 in response to this notice.

[0060] According to the concerned demand, the license demon 15 is rebooted by the license demon control section 45, and the status of the license server 3 in a floating license system returns to usual.

[0061] Moreover, in accordance with processing of the above-mentioned server side Management Department 17, the update of a configuration file 12 is performed also at the client side Management Department 13. Since the file updating command from the managerial-system book soma 23 is simultaneously taken out to these is carried out by file updating processing in each client 2 and the license server 3 synchronizing.

[0062] A file updating control signal is first outputted to the client information setting section 48 in the update of a configuration file by the client 2 from the setting change control section 49 which received the update command.

[0063] By the client information setting section 48 which received this update control signal, it has by the new configuration file 12 previously received from the configuration-file generation section 33, and the configuration file 12 set up on the client now is updated.

[0064] The return to the normal state of a floating license system is realized by a halt and rebooting of the license demon 15 who doubled with file updating processing in the above each client 2 and license server 3 and the file updating in a server 3, all the configuration files 12 being updated by the new thing.

[0065] As mentioned above, the license managerial system concerning the gestalt of enforcement of this invention While the managerial-system book soma 23 which generates a configuration file is formed in the license allocation management server 4 The client side Management Department 13 and the server side Management Department 17 are established in each client 2 and the license server 3. Since fixed rebooting of the license demon 15 is suitably carried out by the command from the managerial-system book soma 23 and each configuration file 12 was updated simultaneously, change of a configuration file 12 can be performed to exact and suitable timing. Thereby, the license resources of a tool 11 are efficiently manageable.

[0066] Therefore, the automatic generation of the reduction (2) configuration file 12 of the management load by the management-data unification by using (1) user information database 21 according to this invention. The change by the content of the user information database 21 being reflected suitably, as for the down-time reduction (4) configuration file of the tool by adjusting the setting change stage from the execution status of the prevention (3) tool of the file correction mistake by automatic distribution, Tool unauthorized use exclusion of the inaccurate user who lost use capability by leaving etc. is realized.

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[0070] Furthermore, with the enforcement gestalt, although the case where the content of the configuration file 12 in a license server 3 and the configuration file 12 in each client 2 became the same was explained, this invention is not restricted, when making both contents the same in this way. According to the gestalt of a floating license system, various patterns can be considered as the method of a setup of a setting information. For example, two kinds of configuration files are prepared, the information about a license is stored in a license server 3, and it may be made to store data, such as an information about a license reference and the license server 3, in each client 2.

[0071] Moreover, the technique indicated in the enforcement gestalt is the program which a computer (computer) can be made to perform.

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DESCRIPTION OF DRAWINGS

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[An easy explanation of a drawing]

[ Drawing 1 ] The block diagram showing the example of 1 configuration of the network system which applies the license managerial system concerning the enforcement gestalt of this invention.

[ Drawing 2 ] The block diagram showing the example of a configuration of the license managerial system of this enforcement gestalt.

[ Drawing 3 ] Drawing showing the example of a configuration of the conventional license managerial system.

[An explanation of a sign]

- 1 — Data transmission line
- 2 — Client
- 3 — License server
- 4 — License allocation management server
- 11 — Tool
- 12 — Configuration file
- 13 — Client side Management Department
- 15 — License demon
- 16 — Key file
- 17 — Server side Management Department
- 21 — User information database
- 22 — Database-management section
- 23 — Managerial-system book soma
- 25 — DB management processing section
- 26 — DB registration reference section
- 31 — Update activation section
- 32 — License allocation Management Department
- 33 — Configuration-file generation section
- 34 — Configuration-file transmitting section
- 35 — Communications control section
- 36 — Setting change control section
- 41 — Communications control section
- 42 — Configuration-file receive section
- 43 — License information setting section
- 44 — Setting change control section
- 45 — License demon control section
- 46 — Communications control section
- 47 — Configuration-file receive section
- 48 — Client information setting section
- 49 — Setting change control section
- 81 — Client
- 82 — Configuration file
- 83 — License server
- 84 — Software
- 85 — License key
- 86 — LAN

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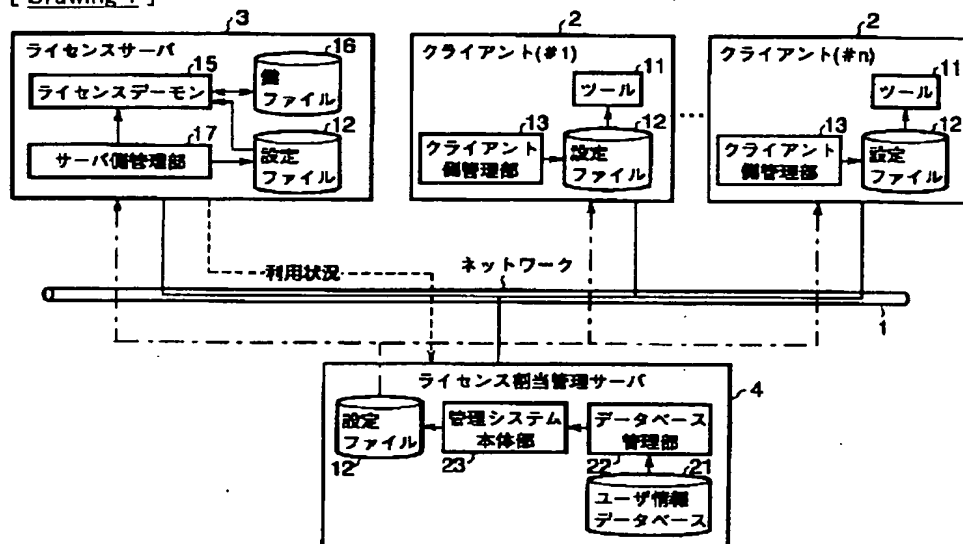
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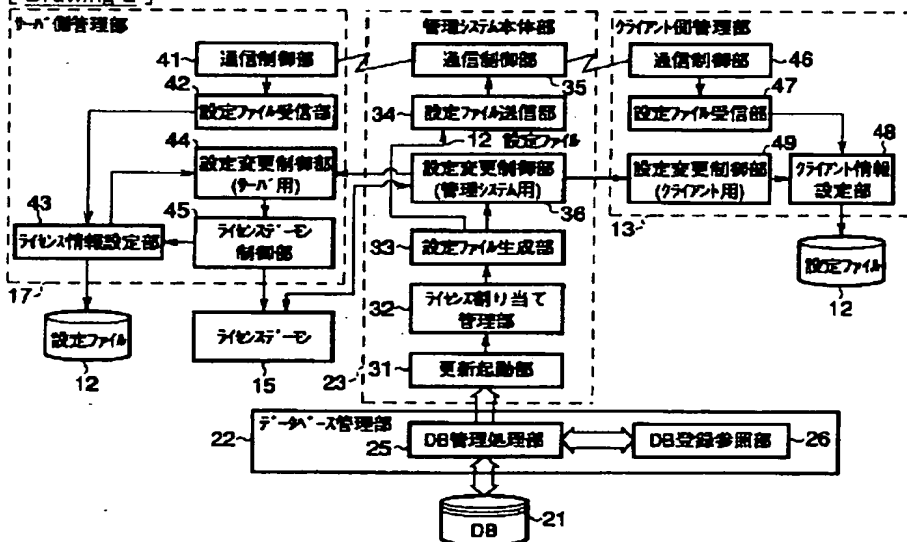
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## DRAWINGS

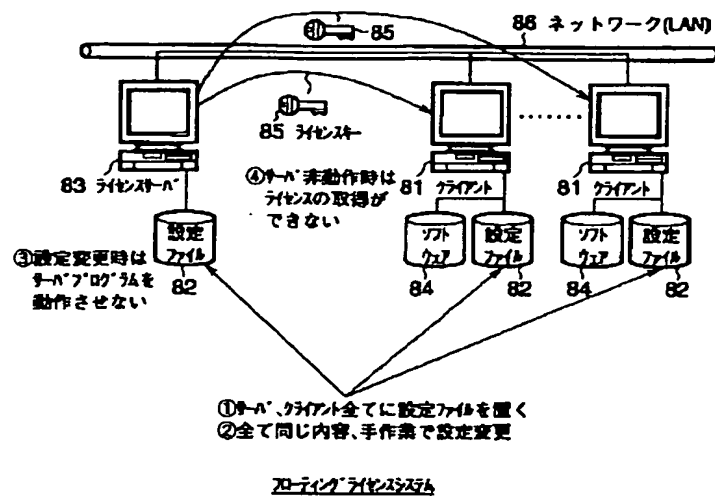
[ Drawing 1 ]



[ Drawing 2 ]



[ Drawing 3 ]




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[Translation done.]